DETAILED ACTION

The amendment of September 24, 2010 has been considered. Any rejection not recited below have been withdrawn. Claims 17-31 remain rejected..

Claim Rejections - 35 USC § 103

(1) The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(2) **Claims 17-31 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Redding* (US 6149953).**

(3) Evidence is provided by *Nassu* (Grassas y Aceites, 1999) and *Duffett* (WO 00/09636), below.

(4) Regarding claims 17-29: *Redding* discloses encapsulated bakery ingredients generally composed of functional core component encapsulated in a shell material (see *Redding* column 1, lines 35- 50). These encapsulated materials (secondary additives) are then added to typical bread dough ingredients such as flour, yeast and water (see *Redding* paragraph bridging columns 1 and 2). Example 2 uses encapsulated ascorbic acid at 140 ppm (0.014%) of a dough.

(5) The secondary additives disclosed include acidulants such as ascorbic acid, as well as protease enzymes (see *Redding* column 2, lines 6-16). An embodiment of the *Redding* invention utilizes an ascorbic acid core encapsulated in a coating so as to prevent the release of the ascorbic acid until the early stages of baking when it achieves its bread improving effect (see *Redding* column 2 line 46-col 3 line 12).

(6) The particles preferably have a shell thickness of up to 200-300 micrometers, with the ascorbic acid not exceeding half the thickness of the shell, that is, up to 100-150 micrometers (see *Redding* column 7, lines 44-65).

(7) The outer coating is comprised of vegetable fats (for example hydrogenated cottonseed oil, examples) and may also include emulsifiers such as mono-glycerides (see *Redding* table 2, second section) in combinations so as to provide the melting point and release characteristics desired in a particular application (see *Redding* column 7, lines 6-11). Furthermore, since the specification does not explicitly recite the exclusion of any other components (e.g., seeding agents) from the lipophilic layer, amended claim 17: “…said layer consisting essentially of…” is examined as “comprising", because according to the MPEP, in the absence of a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising" (see MPEP §2111.03).

(8) Therefore, one having ordinary skill in the art at the time of the invention would find it obvious to use, for example, a combination of vegetable fat such as hydrogenated cottonseed oil with in combination with mono-glycerides, as it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose ....[T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

(9) In example 1, the coating layer is 100% of the triglyceride fat (cottonseed oil). However, *Redding* discloses the use of mixtures of shell materials in order to modify the release behavior of the encapsulated product (see *Redding* column 7, lines 8-10). In using a combination of the triglyceride fat (cottonseed oil) and monoglycerides as above, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the ratio of triglyceride fat: emulsifier from 100:0 as in the example to one utilizing a higher level of emulsifier in order to achieve the desired melting point and release characteristics of the composition (see *Redding* column 7, lines 5-10) for the intended application, since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

(10) With respect to the properties of the fat, *Nassu* discloses the melting point of hydrogenated cottonseed oil (AGH) to be 38.4ºC with a peak temperature of 27.8ºC and a softening point at 32.7ºC (see *Nassu* Table 2). Furthermore, *Duffett* discloses that hardened oils typically have slip melting points from 30ºC to 60ºC and are flaked (see *Duffett* page 1, lines 14-22). *Duffett* also discloses that cottonseed oil is an example of a hardened oil (see *Duffett* page 2, lines 23-26), which reads on: "…slip melting point of at least 30ºC…".

(11) With respect to claim 22, while *Redding* does not explicitly disclose the use of DATEM, it is well known in the art and frequently used interchangeably with mono and/or diglycerides (disclosed in *Redding*) and would require only the substation of compounds known in the art for the same purpose.

(12) Claims 30-31: *Redding* discloses the production of the granules by adding the functional ingredient into the liquid lipophilic component and cooling until the product granulates. While *Redding* does not explicitly disclose spray coating (claim 30) or atomizing the suspension of particles within the coating (claim 31) the skilled artisan would recognize each both the *Redding* granulation method and those claimed are well known encapsulation methods to one skilled in the art, and would be suitable for use interchangeably to achieve predictable results.

Response to Arguments

(13) Applicant's arguments filed on September 24, 2010 have been fully considered but they are not persuasive.

(14) **As to the arguments regarding the rejection of claims 17-31 under 35 U.S.C. §103(a) as being unpatentable over *Redding*:**

(15) **Applicant argues that the recited lipophilic layer of the encapsulated granule is patentably distinguishable from the shell of the seeded microcapsule in *Redding*, because the recited lipophilic layer does not include seeding agents. Examiner disagrees.**

(16) *Redding* does teach of a microcapsule comprising a core that is surrounded by a shell having seeding agents disposes therein (see *Redding* abstract). *Redding* also teaches that the seeding agents impart enhanced structural and/or functional characteristics to the microcapsules, such as, increasing structural integrity, enhancing thermal stability, or effecting solubility (see *Redding* column 3, lines 47-59), which reads on claim 17: "…said layer consisting essentially of…", because according to the MPEP, in the absence of a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising" (see MPEP §2111.03). Since, the specification does not explicitly recite the exclusion of any other components (e.g., seeding agents)

from the lipophilic layer, the transitional phrase “consisting essentially of” in claim 17 is examined as “comprising".

(17) **Applicant argues that the recited lipophilic layer of the encapsulated granule is patentably distinguishable from the shell of the seeded microcapsule in *Redding*, because there is no teaching or suggestion in *Redding* to remove the seeding agent. Examiner disagrees.**

(18) *Redding* teaches of using shell materials not only for seeded microcapsules, but also as shells for encapsulating seeds (see *Redding* column 4, lines 48-51), thus the seeding agents are removed from the shells and become the encapsulated cores. Furthermore, *Redding* teaches of fully embedding the seeds, or encapsulated seeds in the shells (see column 4, lines 15-19; figures 2, 4), thus diminishing, or eliminating the seed’s control or influence over the release of the core material.

(19) **Applicant argues that the recited lipophilic layer of the encapsulated granule is patentably distinguishable from the shell of the seeded microcapsule in *Redding*, because it is not clear which (if any) of the triglyceride fats listed in Table 2 have a slip melting point of at least 30ºC. Examiner disagrees.**

(20) *Redding* teaches that outer coating is comprised of vegetable fats, such as cottonseed oil flake (see *Redding* example 1). *Duffett* teaches that hardened oils typically have slip melting points from 30ºC to 60ºC and are flaked (see *Duffett* page 1, lines 14-22). *Duffett* also teaches that cottonseed oil is an example of a hardened oil (see *Duffett* page 2, lines 23-26), which reads on: "…slip melting point of at least 30ºC…".

(21) **Applicant argues that the recited lipophilic layer of the encapsulated granule is patentably distinguishable from the shell of the seeded microcapsule in *Redding*, because there is nothing in *Redding* that can reasonably be interpreted as providing any motivation or other rationally that would lead one skilled in the art to combine a triglyceride fat and one of the defined release agents in the recited amounts. Examiner disagrees.**

(22) *Redding* teaches that the outer coating is comprised of vegetable fats, such as cottonseed oil flake (see *Redding* example 1) and may also include emulsifiers such as mono-glycerides (see *Redding* table 2, second section) in combinations so as to provide the melting point and release characteristics desired in a particular application (see *Redding* column 7, lines 6-11). Furthermore, *Redding* teaches of fully embedding the seeds, or encapsulated seeds in the shells (see column 4, lines 15-19; figures 2, 4), thus diminishing, or eliminating the seed's control or influence over the release of the core material. Moreover, *Redding* explains that encapsulant shell materials should be solid at

ambient temperatures and should also have suitable melting properties so that they'll be released at the appropriate temperature (see *Redding* column 6, lines 52-64).

(23) Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the ratio of triglyceride fat: emulsifier in order to delay the release of the encapsulated materials until the desired temperature for the intended application is reached, since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASSAF ZILBERING whose telephone number is (571)270-3029. The examiner can normally be reached on M-F; 8:30am-5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith D. Hendricks can be reached on (571)272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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